THE FARM INDEX

March 1969

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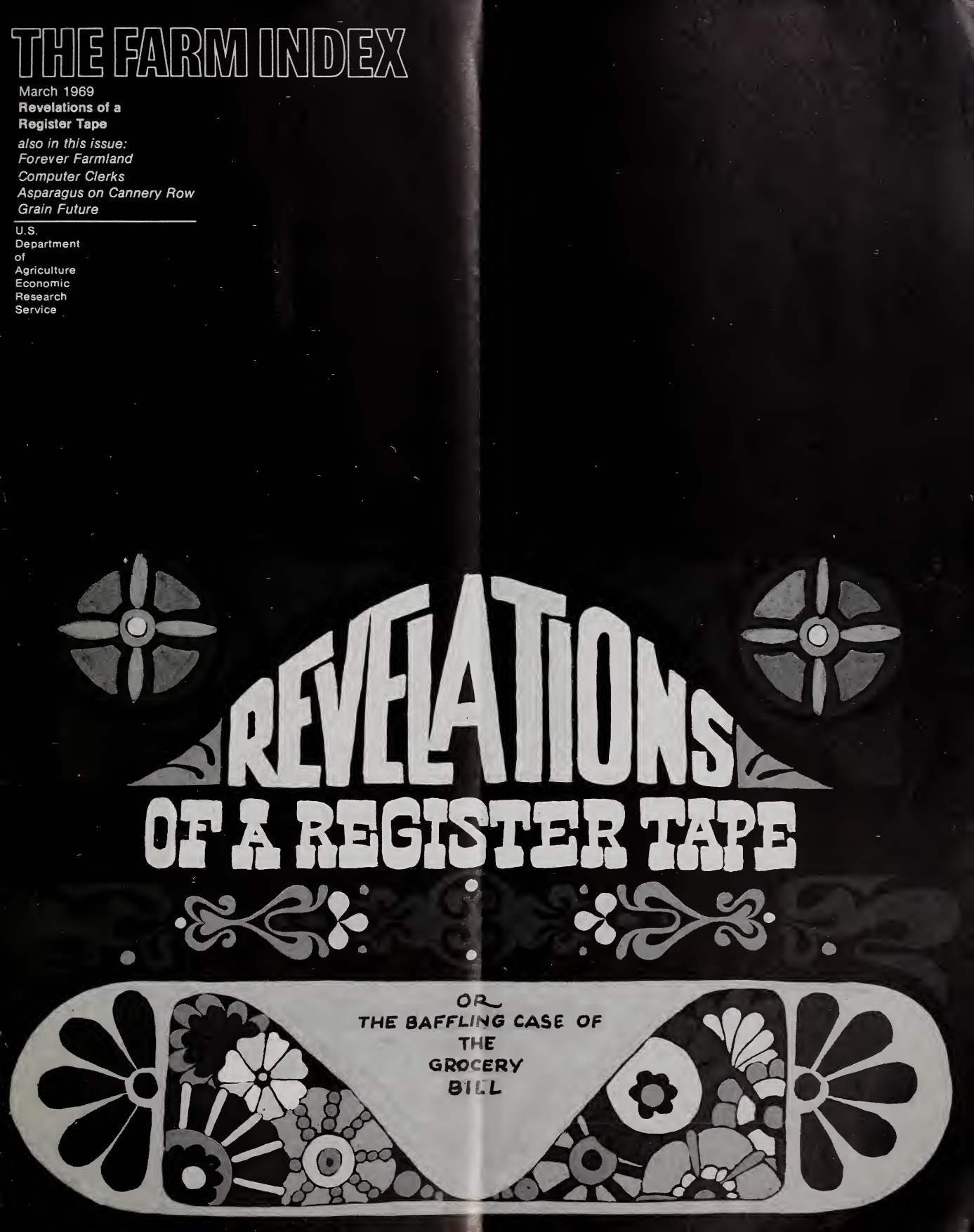
U.S. Department of Agriculture Economic Research Service



THE AGRICULTURAL OUTLOOK

Biggest GNP ever in 1968. U.S. Gross National Product rose by 5.5 percent last year—in constant (deflated) dollars. The actual amount, according to preliminary statistics, came to $860.7 billion, up $71 billion from 1967.

Some slackening is probable in 1969. Tighter monetary and more restricted tax policies began taking effect in early 1969. They will probably bite harder in the remainder of the year to slow down our accelerated growth and pace of price inflation.

Slowdown expected in retail food price rise. Retail food prices in 1969 are expected to average only 2 to 2½ percent above those last year. At the grocery store, the increase probably will total no more than 2 percent. But restaurant food prices, which climbed by 5 percent in both 1967 and 1968, are expected to rise at about the same rate in 1969.

Food price rise likely to fall short of increase expected for other consumer purchases. Most nonfood items in consumers' budgets are expected to register smart price increases this year. Even though the pace may slacken through the year, these prices on average may rise nearly as much as in 1968—when they were up about 4½ percent from a year earlier. Last year, retail food prices, which were up only 3½ percent, served to dampen the overall surge in consumer prices. Retail food prices may well play this role again in the 1969 economy.

More wheat. Total wheat supply 1968/69, at 2.1 billion bushels, was up 160 million over a year earlier. But overseas requirements are down. Thus, with domestic food use about the same as last year, much more of the supply this season is available for feeding and carryover. With wheat prices competitive with feed grains, wheat feeding could total 150 million to 200 million bushels in 1968/69, compared with around 60 million last year. And the carryover on June 30, 1969, could total 700 to 775 million bushels, up from last summer's 537 million.

Rice record. Total U.S. supply 1968/69: 112 million hundredweight. This includes a record 1968 crop of 105 million hundredweight, 18 percent more than the previous year. Exports are likely to be above last year but not enough to prevent an increase in carryover. Acreage allotment 1969 has been set at slightly over 2 million acres, 10 percent under 1968.

Tobacco: filtering out the facts. Total 1969 cigarette consumption (accounting for about four-fifths of all tobacco used) may do well to match 1968. Increasing cigarette taxes, smoking-health publicity are apparently reducing the proportion of smokers and possibly cigarette use per person. Over the past decade filter tips rose from 45 to 75 percent of all cigarettes smoked. By 1968 filters and other manufacturing changes displaced about one-sixth of U.S. tobacco used for cigarettes.

Using the old bean. Soybean meal feeding of livestock in the U.S. is now expected to be about 2 percent above the 10.8 million tons fed in 1967/68. Supplies of the bean itself, however, are a record high 1.25 billion bushels in 1968/69, up 17 percent from last year.

Largest grapefruit crop in 21 years. In the main, grapefruit escaped the December freezes that hit other citrus and noncitrus fruits and output of the second most popular citrus fruit is expected to be up 33 percent over last season. But delayed maturity has held up shipments from Florida.

Milk declines. This year's milk production is likely to decline from the 117.3 billion pounds estimated for 1968. Gains in output per cow are not expected to offset the continuing—though possibly slower—decline in cow numbers.

Despite booms and busts in land sales, despite the rise in average value per acre, despite urban and industrial encroachment, vast expanses should remain in farmland.

FOREVER FARMLAND

Harry Simpson and his wife were getting on in years, but they still had plenty of good ones left to put in on their successful livestock farm. And that's just what they intended doing.

So when the developers of Vista Village first approached Harry 6 years ago about buying his farm, he turned them down cold.

But the developers came back. They offered the Simpsons more than they could hope to earn from their farm the rest of their lives. Harry still held out.

The Vista Village people didn't give up. They made still another offer: Top price for the Simpson farm, *plus* the title to a similar livestock farm nearby. Mr. and Mrs. Simpson could have the money and continue farming, too.

That did it. Harry signed on the dotted line and he and his wife have been happily operating their new livestock farm for the past 5 years.

While the Simpsons' case history may not be typical, it points up problems that face both owners and buyers of farmland. During the last decade, farmland values have risen 70 percent—faster than the general level of all prices.

By March 1, 1968, the national index of average value per acre of farmland and buildings had risen 6 percent above the value a year before and 2 percent over November 1, 1967. Estimated total value of all farmland and farm buildings in March 1968 came to $193.7 billion, or $178 per acre. And for commercial farms (averaging 550 acres), the estimate was about $100,000 per farm.

What's been pushing the values up? There is no simple answer. What's true in one area might not be true in another. Each sale or transfer of farmland represents a different mix of market forces which influence buying and selling, incentives and prices.

Industrial and population centers are stretching further and further into the country, however. Land for recreation purposes is in heavy demand. And the number of two-home families (one in the country) is increasing. All this has tended to push up land prices in many areas.

But, nearly two out of every three purchases of farmland today do not contribute to urban expansion, to recreational facilities, or to second homes. They are made by farm operators who want to enlarge their farms.

This is probably the main reason why farmland values in general remain remarkably sensitive to expected agricultural returns.

For example, during 1958-62, the average net annual return on an investment in farmland was about 3.5 percent of the market value. In 1963-67, the return was closer to 4.0 percent.

The value of land rose in similar fashion. The average landowner whose land increased in value more than 5.5 percent a year for the last 10 years saw his

land go up 4.4 percent in value during 1958-62. In 1963-68 it went up 6.6 percent.

How long will farmland values continue to go up? Economists point out that modern technology is producing more and more from fewer acres. Continuing advances can be expected to "stretch" the acre even further.

These economists point out that enormous areas are likely to remain as farmland for many years to come regardless of urban and industrial expansion into the country. Thus, as land becomes no longer the primary limiting resource in agriculture, its value for such uses is expected gradually to level off. (*1*)

High Feed Grain Yield on Less Land Upsets Output-Use Balance

Overproduction of feed grains has been periodically plaguing feed grain producers and agricultural planners.

From 1949 through 1953 total feed grain use was pretty well in balance with production.

But since 1954, the grower of feed grains has boosted his per acre yield nearly 6 percent per year, while his customers (both at home and abroad) have increased their use of U.S. feed grains at a rate of only 3.5 percent a year.

In total terms, use of feed grains has risen about 50 percent over the level of use in 1949-53. Yield per acre, however, has about doubled.

Because of this trend, many acres have been diverted from feed grain production during the past 15 years.

During 1963-67, diversion averaged about 29 million acres a year, bringing feed grain acreage 22 percent below the 1949-53 average.

With the much higher yield, production in 1963-67 averaged 156 million tons—42 percent higher than in 1949-53. Use—up 44 percent—averaged a little over 159 million tons. This brought a reduction in carryover of 16.5 million tons during the 5-year period.

During the past 5 years production would have met all our requirements with acreage about 1/5 below that 15 years ago. (*2*)

Cotton Farmers "Over-Invest" In Machines But Cut Risk in Half

A cotton farmer with one tractor to take care of his crop in an average year may need two tractors in a year when the weather acts up.

If he owns two tractors, however, that makes him technically "over-invested" in machinery and equipment in the average year.

Nevertheless, the smart Mississippi cotton farmer won't base his machinery or labor decisions on average crop years.

A study of weather and soil data for the Mississippi River Delta area from 1914 to 1966 indicates that weather could stop the farmer from performing some essential operation in about half the years.

Basing decisions on average weather, then, is taking a bigger risk than most farmers like to take.

Assuming only 1 unfavorable year out of 7, failure to perform certain tasks on time in the bad year could only be an inconvenience or produce a slightly smaller yield.

Or it could be a disaster.

To be on the safe side, it is probably necessary for a Mississippi Delta cotton farmer to be considerably over-invested in machines most of the time so he can be geared to handle difficulties in problem years.

The number of days suitable for fieldwork that a cotton farmer needs will vary, of course. His secondary crop preferences and the kind of soil he has are factors.

Corn and soybeans appear to be about equally profitable as alternate crops in the Delta, but soybean acreage continues to expand while corn acreage is decreasing.

The figures on time available for preparing land and planting the two crops show that the risk of failure to get the crop planted on time is much higher for corn than soybeans.

Most Delta corn is grown on sandy soil. Part of the reason for this may be that the time available for preparing the land and planting is much greater for sandy soil than for clay soil. (*3*)

Real Estate Brokers Handle Half Of Voluntary Farmland Transfers

The realtor's office on Main Street. Two farmers talking across a fence. Or the musical chant of an auctioneer.

Each scene brings to mind a method of selling farmland—through a broker, by direct transfer, or by public auction.

How important is each?

During the year ending March 1968, 47 percent of voluntary sales of farmland were completed with the assistance of a broker, 39 percent were direct sales, and 14 percent of the voluntary transfers were sold by auction or public sale.

This picture hasn't changed much in recent years. Sales through brokers have dropped only 2 percent since March 1964, auction sales have gone up the same amount.

And, as was true in 1964, differences in transfer methods showed up among farming regions.

The highest brokerage participation in sales occurred in the Northwest dairy and California specialty areas. A lot of rural

property is being bought for nonfarm uses in these areas and sales of this type are usually handled by brokers.

Though public auctions represented a fairly small proportion of sales in most regions, a significant percentage showed up in tobacco areas. In those States, one out of three sales was by this method.

Direct selling was common in all regions, with the proportions of such sales quite similar to those of 5 years ago. This method ties in closely with one characteristic of the current market—a high demand for parcel units for farm enlargement. The "expansion buyer" is usually looking for property in his own neighborhood and often deals directly with a neighbor.

What's the conclusion from all this?

First, brokers still handle the major share of farmland being transferred. In terms of dollar value, their share was close to $3 billion of the $5.4 billion worth of farm real estate sold in the year ended March 1, 1968.

Second, despite the current market characteristics, the proportion of direct sales is not increasing.

And as commercial agriculture reaches new levels of sophistication, the demand for specialized services will expand. The demand for a land specialist will be no exception. (*4*)

Larger Size Loan May Postpone Date of Mortgage Burning Party

Friends and neighbors had to wait a long time for a farmer to throw a mortgage burning party in the good old days.

But they're likely to wait even longer today. The reasons? Use of credit as a tool, larger loans, higher interest rates, and a change in farmers' goals.

The average new farm mort-

Men and Milestones

PATRIOT, PRESIDENT, AND AGRICULTURAL PIONEER

It is the 1780's. Thomas Jefferson is U.S. Minister to France. There, the extremely popular drafter of the Declaration of Independence gets to see what European agriculture is like firsthand. Always on the lookout for some new seed or plant or implement that might benefit the farmers of his new Nation, he actually goes so far as to smuggle a particular variety of rice across the Italian border.

* * *

After returning to America, Jefferson still found time to maintain his active interest in farming along with new responsibilities as Secretary of State, then Vice President, and finally President of the United States.

As part of his continuing efforts to develop better plants and animals, he imported Merino sheep to improve the breed in this country.

Our third President also invented many farm tools, including a seed drill, a hemp brake, and a threshing machine. But his most important agricultural invention probably was a moldboard for plows.

Soil conservation and crop rotation interested him too. He worked out a rotation including wheat, corn, peas, potatoes, and clover which he felt would maintain the fertility of the land. And he tried various fertilizers such as marl, gypsum, and animal and vegetable manures.

Throughout his life, Thomas Jefferson promoted agricultural education. In 1803—16 years before his plans for the University of Virginia became a reality—he urged that all colleges and universities have courses in agriculture.

And while Jefferson is best remembered for his roles in shaping political history, the mark he made in American agriculture can still be seen today. (*6*)

gage loan taken out during the first half of last year was 11 percent larger than a year earlier. And the farmer had to sign at a higher rate of interest to get it.

During the first 6-month 1968 period, the average loan by Federal land banks and life insurance companies was for $31,400. The average for the first half of 1967 was $28,310.

Altogether, new farm mortgage money loaned in the first 6 months of 1968 by the life insurance companies, Federal land banks, and the Farmers Home Administration (FHA) totaled $966 million. That was 10 percent more than loans a year earlier, but only 78 percent of the record amount loaned first half 1966.

The first-half 1968 increase in new loans was shared about equally between the Federal land banks and the life insurance companies. As in recent years, the number of FHA loans increased. But direct lending by the FHA continued to decline in relative importance.

Farmers and others owed the three lending groups $12.2 billion in farm loan mortgages on June 30, 1968. This was 8 percent more than a year before.

Apparently farm mortgages aren't for burning these days. The classic dream of farmers of owning their land "free and clear" seems less important or even unnecessary to them now. They would rather have the credit to use as a tool and increase their economic leverage.

Thus, since 1957 farm debt has risen relative to total farm assets owned. The 1967 total farm debt to asset ratio was 17.0 percent compared with 11.0 percent for 1957.

Interest rates on both life insurance and Federal land bank loans continued to go up, and farmers' repayment ratio on all real estate loans went up, too—from 4.0 percent during the first half of 1967 to 4.2 percent in the comparable period of 1968. *(5)*

Progress in the Paddy: Airplanes Update Rice Growing in Arkansas

Again and again a snub-nosed biplane swooped low over a submerged field, peppering it with pellets on each pass.

At the end of his last run, the pilot dipped his wings to the farmer who stood on a levee below, and flew off.

The crop: one of the oldest grains known to man, rice.

The farmer: one of 76 in the Grand Prairie area of Arkansas who was surveyed in the summer of 1966 about his rice farming methods.

He, along with others of his fellow rice farmers, have regularly hired cropduster pilots to spray herbicide and broadcast fertilizer pellets on rice crops.

Occasionally they have even used airplanes to broadcast rice seed. But this method of seeding —always a rarity in the area— has become an increasingly rare choice of Grand Prairie farmers.

In 1966, most said they either seeded their fields with a tractor-drawn spreader or a grain drill.

Still, this is a far cry from cultivating rice with water buffalo and manual labor, the method still practiced by rice growers in many parts of the world just the same as it was centuries ago.

In the United States, rice production has been at least partially mechanized since Civil War days. Most planting, cultivating, and harvesting equipment used for wheat is easily converted to rice use.

Today American rice farms use an average of less than 2 man-days of labor per acre, compared with 60 to 70 man-days per acre in other rice growing countries.

In the Grand Prairie area, farmers normally grow rice in a rice-soybean-soybean rotation. That is, one crop of rice followed by two of soybeans.

On the average, about one-third of the cropland on farms surveyed by ERS was sown in rice and 60 percent sown in soybeans, double cropped with small grains, lespedeza, cotton, sorghum grains, and pasture.

Small rice farms (260 to 560 acres) tend to have three men in the field for every four tractors; medium farms (561 to 880 acres), four men to five tractors; and on large farms (881 to 1,520 acres), five men to six tractors.

The farmers use their tractors to draw disc plows and levee discs across their land in order to level the ground and form levees around fields and along contour lines. Other machinery is also used in fertilizing and preparing the seedbed.

The rice farmer in the Grand Prairie area broadcasts or drills his seeds on dry soil. After seedlings reach a height of 3 to 4 inches, he applies herbicide and submerges the field, increasing the height of the water as the plants grow.

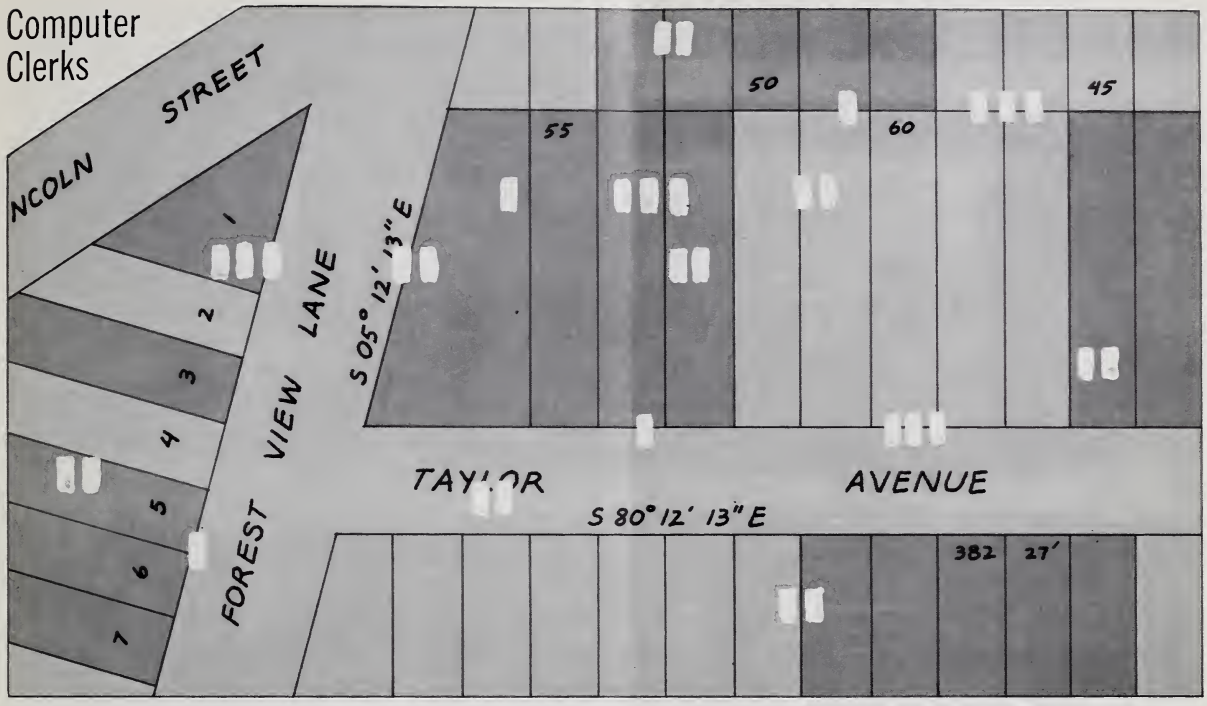
During the growing season, he will probably keep his field under water a total of 90 to 100 days. Maximum depth of water at any one time is 12 to 15 inches. Just before the crop matures the farmer drains his field and allows the land to dry so that it will support heavy combines and automatic equipment. The actual rice harvest is then similar to the wheat harvest.

Timing of each operation, however, is critical to the success of the crop.

Because of adverse weather in some years, Arkansas farmers "get behind" in building their levees or in preparing their seedbeds and this can cause them to lose money.

On the farms surveyed, the sharp differences between gross farm income under least favorable weather conditions and under most favorable weather conditions were estimated at $7,732 on small farms, $9,514 on medium-sized farms, and $16,240 on large farms. *(7)*

Computer Clerks



Money and time are only a few of the savings when computers take on the role of land records clerks. Here are the experiences of three cities with automated land records.

Just push a button. Out comes all you want to know about Farmer Smith's South 40. Or the intersection of Broad and Main Streets. Or any given parcel of land in the county.

This is the dream of every land buyer and seller, every lawyer and government planner who has ever had to wade his way through the maze of land records that are kept today.

Even a simple thing like a title search entails checking many different records in many different city or county offices. It's a time-consuming task—and an expensive one.

In 1966 the cost of transferring ownership of a $28,000 farm from one person to another was about $2,000 (including sales commissions, legal fees, and title insurance). And transfer costs are likely to get even bigger as searching titles gets more complex, due to fragmentation of land parcels in suburban areas and consolidation of land parcels in rural regions.

A few communities in the United States have already decided that the only way out of the land record morass is to switch to computerized record-keeping.

Since it's costly to convert *all* current land data into a suitable form for a computer, most of these communities have started out with a flexible data system that can start small and be added to piecemeal as time goes by.

Here are the experiences of three communities which have taken steps to make pushbutton land records a reality.

Nassau County, N.Y., is a next door neighbor of New York City. Until the county installed an automated land title record system in the latter half of 1967, the county clerk's office was swamped with the work of checking deeds. Not only was the number of land parcels growing, but there was a rapid increase in turnover rate.

Now a deed can be located in less than 10 seconds. And new records are available in the automated system within 2 days instead of 2 weeks.

It cost Nassau county about $72,000 to install the equipment needed to store and retrieve its 10.5 million land records. But the estimated savings in storage costs alone should add up to about $68,000 annually.

Under the new system, records are stored on microfilm frames. They take only one-tenth the floor space that had to be allocated for the 11,000 volumes of paper records.

Now Nassau County can keep a duplicate copy of all documents recorded. (Duplicates are not a waste of space. Witness the situation in Chicago—where all of the city's public real estate records prior to 1871 were destroyed in the great fire that year.)

Misfiling of records removed

for duplication was a problem with Nassau's hand-kept system. But the chance of error is sharply reduced under the new system, since copies can be made easily without removing the microfilm frames.

Thus far, Nassau County has not combined other economic and social data with land title records. To locate information related to recorded deeds such as liens, zoning data, and tax assessments, an individual still has to refer to paper records in many different offices.

The District of Columbia's Real Property Data Bank got its start when the city wanted to make a survey of housing conditions.

Using data from public records in the District's Finance Office, a file was started on 153,000 land parcels. As time went by, information from the Planning Commission Management Office and the School, Police and Health Departments was added. Future plans include the possibility of including land ownership deeds.

In addition to its initial use in the housing survey, the District's data bank has since been used in many ways. It has aided in site acquisitions by the education, highway, and fire departments; it assists in manpower distribution of housing and health inspectors; it provides an early warning system to detect urban blight; it's the basis for zoning versus actual land use studies.

Alexandria, Va., has a land data bank that is one of the most advanced in the United States.

The heart of the city's Urban Management Data system is a land parcel file which records information on each of the city's 20,000 land parcels.

By consulting the bank, city officials can find out the name and legal address of each landowner, a land parcel's location in census and planning districts, its assessed value, and improvement and use data such as zoning, utilities, and parking spaces.

If there's a building on a land parcel, the user of the computer can find its location on the property, the number of floors, the type of construction, the year it was built, and its general condition. Data are also kept in the land parcel file for each business establishment in each building.

Alexandria's data bank also contains 120 items on each of the 3,400 street sections in the city. The location of every fire alarm box, street light, and fire hydrant has been programed into the computer. The bank also has all the data on number of street lanes, parking meters, mass transit routes, and sewer facilities.

Because it is so comprehensive, Alexandria's data system can do a lot for city planners. It's been the basis for a vacant lot survey, a study of highway location impact, a parking meter inventory, a survey of traffic intersections where there have been more than five accidents in a given year. And it even provided the statistical sample for a dog census.

The whole system cost Alexandria roughly $100,000 to begin full operation. But it's already meant a big savings in time for urban officials. *(8)*

Diversity of Crops Stretches Out Workers' Season in Washington

Washington—the Nation's top apple-producing State—has a highly diversified crop mix, fruits and otherwise. Demand for "temporary" help therefore stretches the work season from late May to late October.

In the past 25 years apples have accounted for 30 to 40 percent of land devoted to fruit in the State. Pears, grapes, and cherries have all increased in importance since 1940. And apricots, peaches, and plums have declined meanwhile.

The net effect has been to provide jobs both early and late in the year for seasonal workers.

This doesn't mean that the individual producer grows a variety of fruits or other crops. He's still likely to specialize within his own orchards or farmland. But the migrant farmworker doesn't have to travel far from one specialized farm to another to find seasonal work. *(9)*

It's Mostly Modern, But Not All; That's the Ozark Housing Picture

Classic Ozark architecture used to be pretty much tumbledown Turn-of-the-Century. It's a lot better now. Some new housing has been built and many older homes have been remodeled. But many Ozark residents still dwell in substandard houses most of us wouldn't want to call home.

One in every three Ozark homes today is fairly new—built since 1950. And most of these newer homes come equipped with the essentials of modern living—complete plumbing facilities, sewerage, and a good water supply.

But the other two-thirds of the region's housing isn't so good. Only about half the homes built before 1950 have facilities comparable to newer dwellings. And while some of these older homes have been improved in some way, many have not.

According to a 1966 survey conducted by ERS in cooperation with the Universities of Arkansas and Missouri, one in four Ozark houses still lacked complete plumbing, sewage disposal facilities, an adequate water supply, or heating facilities other than a wood or coal stove or fireplace. About a tenth of the homes also needed more bedrooms.

The economists estimated that it would take at least $419 million to correct these deficiencies. But the chances were fairly remote that all of the necessary improve-

ments would be made.

Most Ozark residents own their homes—but many who live in substandard housing can't afford to improve it. Some are older persons living on retirement benefits. Others are unskilled workers with low incomes.

For these people it's easier to do without hot and cold running water or proper heating than it is to pay for their installation. *(10)*

Economic Multipliers Count Ripples Resulting From Economic Changes

Measuring the effect of economic multipliers is a little like dropping a stone into a pond and counting the ripples.

As a statistical tool, the economic multiplier describes the relationship between any given change in an economy and the ripples of economic activity that this change creates throughout that economy.

For example, if a new manufacturing plant is opened in a community and brings in a large payroll and new jobs, what effect will this have on the businesses and people already established there? Vice versa, what happens if a large plant closes its doors?

Business and government leaders want to know what they can expect if either situation develops.

Economic multipliers are not the same for all types of industrial activity.

Generally basic industries — such as farming, mining, and manufacturing—depend on and are directly related to the natural resources of a region. The industries provide the raw material for processing plants—such as flour mills, slaughter houses, and oil refineries. The people in these industries create much of the demand for the items offered by service industries.

Quite often, a change in one of these basic industries will have a more profound impact on an area's economy than a change in one of the service industries.

The service industries include the wholesale and retail trades; transportation, communications, and public utilities; and real estate, finance, and insurance. These businesses hire local labor but they don't use large quantities of locally produced products.

Using estimates of the flow of goods and services among nine sectors of Oklahoma's economy in 1959, economists there recently computed the multiplier effects for production, income, and employment changes for each economic sector.

The table below shows that agricultural processing had the largest output multiplier—2.50. In other words, every $1 increase in this sector's production would generate a $2.50 increase in Oklahoma's total business activity. In contrast, the service sectors generally had small multipliers, implying smaller effects on local business activity.

Agricultural processing also had the largest income multiplier. If this sector's activity expanded enough to increase the income of its employees by $1, total business activity would increase enough to boost personal incomes by $4.32 throughout the State.

The employment multiplier, which described the change in employment throughout the State resulting from an increase in activity of a sector large enough to create one new job in that sector was largest for the manufacturing business—2.93. The employment multiplier for agricultural processing was almost as large—2.82.

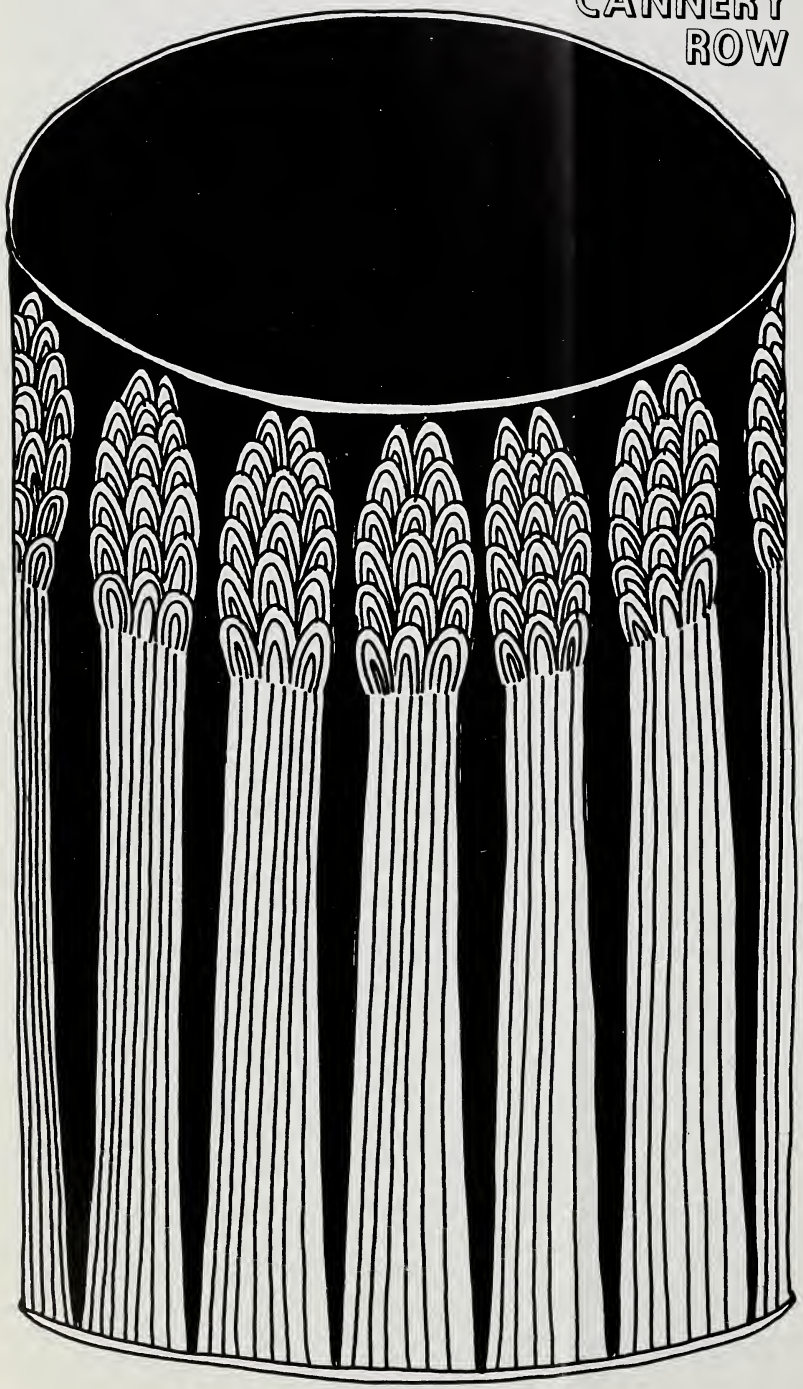
What do these multipliers tell planners? Basically, multipliers are a guide to the total economic impact of changes in one business sector. However, multipliers don't indicate whether such changes are possible, in light of local resources and potential markets.

In some cases it may be virtually impossible for a community or State to increase production, income, or employment in a sector with a particularly large multiplier. Even so, reference to multipliers provides planners with useful information. *(11)*

HOW ECONOMIC CHANGES ARE MULTIPLIED IN OKLAHOMA'S ECONOMY

Business sector	Effect of a gain of—		
	One dollar in final demand on total production	One dollar in personal income originating in each sector	One job originating in each sector
Agricultural processing	2.50	4.32	2.82
Other manufacturing	2.15	3.35	2.93
Livestock and livestock products	2.25	2.81	—
Services	1.76	1.58	1.33
Mining	1.65	1.57	2.56
Crop production	1.55	1.40	—
Real estate, finance, and insurance	1.54	1.46	1.55
Transportation, communications, and public utilities	1.46	1.44	1.45
Retail and wholesale trade	1.46	1.28	1.32

ASPARAGUS ON CANNERY ROW



There's more than one way to can an asparagus spear. And the methods used by a cannery affect its production costs and efficiency, as California research shows.

When you grow a crop in the West and sell it in the East, you've got to produce it as efficiently as possible.

Most of the asparagus crop is produced in California, Washington, and Oregon. Most of it is sold in Eastern markets or exported to Europe. And there are Eastern producers, too—New Jersey, for example—so Western canneries must somehow manage to keep their costs at competitive levels.

The size of the cannery, its rates of production, the length of the canning season—all figure in the plant's efficiency. Combined with these are the quality of the asparagus input, and the canning and labeling systems.

Economists used information from eight canneries in California to find out what combinations are most effective.

They used direct work measurements whenever they could. Otherwise they depended on data from each plant for such items as equipment requirements, wage rates, and operating costs. Raw product costs were not included.

Labor performance was measured by standards that could be maintained by typical workers, although delays tend to slip in during actual production.

Typical processing costs were developed for canneries of four different capacities operating over seasons of 200 to 600 hours. The plants handled asparagus at capacity rates of 200 to 500 lugs per hour.

In a cannery processing green asparagus, this amounts to 7,000 to 17,500 pounds per hour. White asparagus weighs a little more and costs about 1 cent more to process per case of 24 approximately 1/2-pound cans.

There are two ways to pack asparagus spears, and two ways to label them. The methods selected affect costs.

Conventional canning depends completely on people to sort, size, and pack the asparagus.

Presized canning sends the asparagus spears through a set of rollers, sorting them by diameter into four size groups. Then they are packed by hand. This requires more equipment, but less time and labor.

As for labeling, some plants—usually those with their own brand—use the direct labeling method, i.e., the label is put on at the end of the canning process. Otherwise the cans are stored, in "bright stacks" of shiny cans, to be labeled at some later date.

Average costs for canning green asparagus ranged from a high of $2.91 to a low of $1.59 per case. Unit costs dropped as production capacities rose.

Costs of $2.91 per case were found in plants with the smallest input and the shortest season—200 lugs per hour for 200 hours—using conventional canning and direct labeling.

Bright stack storage cut costs about 8 cents for the plant sizes considered. Adding the presizing machinery saved another 3 cents per case.

That 200-hour season's output approached 52,000 cases with total costs of $145,000 to $151,000 depending on the combination of systems used.

Costs of $1.59 a case were found in plants with a 600-hour season and a 500-lug-per-hour input using presized canning and direct labeling. Total cost was about $620,000 for 390,000 cases. In most situations bright stack storage would have been cheaper. But with a 600-hour season it raised costs a penny a case.

Lowering input and output to 200 lugs per hour and 156,000 cases per 600-hour season lowers the season's production costs to $311,000 but raises per case costs to $2.00 with presized canning and direct labeling.

In the middle, a 300-hour season and an input rate of 300 lugs per hour—produces 117,000 cases of canned asparagus for $2.20 a case, using conventional canning and direct labeling. (*12*)

What's It Cost To Make a Pound Of Pasta? Check the Plant Size

Recent change in the relationship of fixed and variable costs have had their effect on pasta producers. Introduction of new technology, primarily the continuous press and automatic drier, poses new problems for plant managers trying to reduce production costs or expand production.

There are about 220 pasta plants in the United States manufacturing macaroni, spaghetti and noodles. And plant numbers haven't changed much over the last 20 years. Though there are more large plants today, those with less than 10 employees still comprise about half of total numbers.

Pasta production can now be completely automated; output per man-hour has doubled since 1947—from 57.7 pounds to 111.8 pounds in 1963. Yet there's room for improvement since it's estimated that 50 percent of industry capacity is unused.

An investigation of today's macaroni industry has highlighted some aspects of production costs and related them to plant size and capacity used.

The study covered four model plants, producing from 1,500 to 4,000 pounds of pasta per hour, and operating for 100 to 365 days per year—less enough shutdown time for cleaning and maintenance. A production day included continuous operation of the processing line plus 8-hour operation of packaging and warehousing divisions. The model plants employed 24 to 34 persons.

Five percent of the output was packaged in 24-pound boxes for institutional distribution and 2 percent was specialty products such as bows, stars, and shells requiring hand packaging. The balance was packaged in 1-pound cartons or plastic bags.

Total investment for these models ranged from $642,000 for the smallest operation to $1,381,000. Equipment costs included in this were from $340,000 to $744,000, respectively.

Production costs per unit of output declined with each increase in p'ant size. A 1,500-pound-per-hour plant, operating at capacity, had costs of $15.72 per hundredweight, compared to $14.15 for a plant producing 4,000 pounds per hour—a difference of 11 percent.

The greatest savings were found when utilization of plant capacity was increased. A 4,000-pound-per-hour plant, operating at capacity of 365 days per year, had costs of $14.15 per hundredweight. Slowing production to only 100 days annually raised costs to $17.22 per hundredweight, an 18-percent difference. (*13*)

Bossy Doesn't Know It But She's Working Under Marketing Order

It's not news that cows don't understand supply and demand principles. They just produce milk. It's up to their owners to bring some order to the business.

Hence the Federal milk orders that set the minimum prices milk dealers can pay farmers. This protects the farmer from drastic price drops when supplies are high.

Almost 90 percent of the milk sold for bottling is price regulated by either Federal or State governments. And these regulations indirectly influence the pricing of most of the rest as well.

At least this was the general

pattern during 1964-1967.

During 1967 about 141,000 milk producers — around one-third of the farmers selling milk and cream—sold their milk under Federal orders. They delivered some 54 billion pounds of milk—about half of that sold to plants and dealers; about 70 percent of the Grade A milk.

In addition to milk sold under Federal or Federal-State orders, about 15 billion pounds of milk were sold under State marketing orders.

Practically all the States with milk controls set minimum producer prices and some also fix the resale prices—which the Federal orders do not.

Ten States without milk controls in mid-1968 did have laws restricting sales of milk below costs.

These laws were instituted because unstable market conditions sometimes developed when distributors cut prices while attempting to expand sales. (*14*)

It May Be Corn But It's The Fourth Largest Farm Industry

Corn is big business.

To farmers, it meant over $2.6 billion in 1967 for the estimated 2,340 million bushels they marketed. A similar quantity was retained on farms where grown for feeding to livestock.

Corn ranked fourth in sales of all farm products and earned nearly 6.2 percent of farmers' total cash receipts that year. Only beef cattle, dairy products, and hogs outdistanced corn in receipts from marketings.

To consumers, corn and corn products meant almost $4.7 billion the same year in terms of money they spent for these items. That's nearly 4.3 percent of the total they spent for food and alcoholic beverages. When the value of exports to consumers abroad is added in, the total comes close to $5.4 billion—nearly 0.7 percent of our gross national product.

In terms of employment, corn's contribution to the economy was even greater than is suggested by its share of the GNP. Corn production and marketing provided some 1,195,000 man-years of employment in 1967—about 1.6 percent of the total civilian workload.

This role that corn plays in nationwide employment is the focus of a recent study of the corn industry. While it's not statistically possible to isolate the full influence of one commodity in our economy, the study does point out the general magnitude of the employment involved.

Corn has a greater impact, of course, on the farm economy in the Corn Belt than in some other areas of the Nation. In Illinois, corn sales accounted for 26 percent of farm cash receipts in 1967 and averaged around 15 percent in the rest of the Corn Belt.

Nationwide, it is estimated that corn production alone means about 354,000 man-years of employment. That includes nearly 234,000 on the farm and about 120,000 in industries supplying goods and services.

Roughly 80 percent of each year's corn crop winds up as livestock feed. In 1967, this meant that about 552,000 man-years went into feeding corn directly or in the preparation of mixed feeds. Feeding of corn for production of meat accounted for about 53 percent of these man-years; for dairy products, 30 percent; and for poultry and eggs, 13 percent.

Corn processing supplied about 91,000 man-years of work—most of it in the manufacture of mill feeds and malt liquors.

Storage, transportation, and distribution of corn and its products added up to another 189,000 man-years—53 percent of which were spent in retailing products to the consumer through bakeries, grocery stores, and eating places.

Federal government agencies worked about 8,800 man-years on corn industry problems—through corn research, grading and inspection, diversion and price-support programs, and crop insurance. The States also chipped in about 500 man-years on corn research at their agricultural experiment stations.(*15*)

Cattle Feeders Anticipate Boost In Marketings From Bigger Herds

Twelve million cattle and calves were on feed January 1—10 percent more than a year earlier.

And cattle feeders stated intentions on January 1 to market 6 percent more cattle during the first quarter of this year—a boost of 9 percent over fourth-quarter marketings in 1968. Most of the increase will be in the West and Southwest where cattle feeding is expanding rapidly. Supplies of pork and poultry this winter and spring are also expected to be up from a year earlier.

Prices for fed cattle were strong through the end of 1968, though feedlot marketings were on the increase then, too. Later this winter prices are expected to soften, though they should average well above first-quarter 1968 prices, when Choice grade steers at Chicago averaged $27.30.

The number of cattle feedlots in the 32 States slipped 1 percent in 1968 to 208,600. A rather evenly distributed decrease in feedlots with less than 1,000 head more than offset an increase from 2,034 to 2,080 in larger lots.

Still, those smaller feedlots (under 1,000 head capacity) accounted for 99 percent of the Nation's feedlots and 53 percent of total fed cattle marketings last year. And they each marketed an average of 60 cattle in 1968. The remaining 1 percent shipped an average of 5,200 head per lot during the year. (*16*)

GRAIN FUTURE

Flow of U.S. wheat, rice, and feed grains into global granary of 1973/74 will reflect shifts in world production and impact of the new, high-yielding "hopefuls."

Our world is one of constant changes from year to year. Scarcities become surpluses. Bonuses for big families are supplanted by funds for birth control programs. Barren earth is transformed into fertile cropland.

There is still much hunger in the world today. But there now appears to be less likelihood of a future worldwide food shortage than earlier.

Grains are the major food staple for the world as a whole. And it is estimated that growth of grain production capacity in the developed countries will be more than ample to meet import needs of the less developed countries. Even if the grain import requirements of developing countries should double to 60 million tons a year, the developed part of the world would still have an excess production capacity of about 30 million tons.

However, import requirements of the less developed countries should diminish as they accelerate the agricultural developments on which many of them are now focusing.

The key to present prospects is new technology in the form of high yielding varieties of wheat, rice, corn, and sorghum. These new varieties are especially responsive to heavy doses of ferti-

lizer as many old varieties were not. When grown under proper conditions, they produce yields which may double, or more, those of the old seeds.

High-yielding dwarf varieties of wheat, developed with the support of the Rockefeller Foundation in Mexico, are proving adaptable across Asia as far north as Turkey and as far south as India. In West and South Asia, they now cover an estimated 16 percent of the total wheat acreage. And they are being introduced in North Africa, too.

High-yielding tropical rice varieties are more recent. The International Rice Research Institute in the Philippines—a combined Ford-Rockefeller venture inaugurated in 1962—has developed two new varieties (IR-8 and IR-5) with yields equal to or better than the temperate-zone varieties of Japan and Taiwan.

The IRRI rice varieties are not yet as widely grown as Mexican wheat. In this 1968/69 crop season they will be planted on about 30 million acres, or about 6 percent of the total rice land in South and Southeast Asia.

Judging by very limited information, the rice crop in South and Southeast Asia in 1968 was perhaps 7 percent larger than it would have been without the new varieties. And the new wheat varieties may add 20 percent to the 1968/69 wheat harvest in West and South Asia.

This is a tremendous achievement. But it's still too soon to evaluate the potential impact of the new grain strains.

For one thing, they have had the advantage of good weather (weather can cause as much as 25-percent fluctuation in crop yields). Also, without the new varieties, grain production in the less developed countries as a whole had been trending upward the past 10 years at an average rate of 3 percent annually.

And there are some factors that will tend to limit the extent that plantings of the hybrids can be expanded.

—As most of the varieties are not indigenous to the regions where they are being introduced, they may be susceptible to local diseases and insects—which will be difficult to control without more advanced plant protection services.

—It will take large investments to expand Asia's irrigation facilities. Without reliable irrigation throughout the growing season, farmers cannot risk losing the large sums they must pay for fertilizer and plant protection chemicals. And inadequacy of credit facilities prevents many farmers from buying inputs needed for the new technology.

—Extensive multiple cropping (because of the short growing season of the new grains) does not now appear as feasible as earlier. It is likely to be limited to less than 10 percent of Asia's total rice area now under irrigation.

—Lack of drying facilities for harvested rice creates a problem in many areas for the new varieties. They mature late in the wet season and spoil rapidly if not dried after harvest.

—In some areas, the new rice is considered inferior to traditional types in milling qualities and taste. These objections, however, should be eliminated as improved varieties are bred.

In addition, priorities given to agriculture could weaken as the food crisis of the last few years abates. And farm prices could fall below those giving farmers enough incentive to modernize their methods. This situation would slow down dissemination of the new varieties.

At the same time, if internal marketing and distribution systems in such countries are not revamped, locally produced food cannot be gotten to the people who most need it.

Of equal importance are the potential problems of finding export markets at satisfactory prices when countries begin to produce a surplus over their effective demand. (*17*)

What's Ahead for U.S. Grain Exports

With the world food situation as volatile as it is, what are the prospects 5 and 10 years from now for exports of U.S. grains?

For wheat: Only modest growth of around 5 percent between now and 1973/74, and perhaps a rise of one-fifth between then and 1980.

For rice: No significant expansion and possibly a tapering off from the current high level.

For feed grains: A 50-percent increase by 1973/74, with a further rise of about one-fourth for the longer term.

These ERS projections to a near-term 1973/74 and a longer term centered around 1980 are based on the assumptions that:

—current programs and policies affecting agriculture and trade in foreign countries will continue;

—the United States will take a firm position to maintain its present share of the world market, and food aid will be an important part of this export effort;

—there will be no crop failures as bad as India's in 1965 and 1966 and the Soviet Union's in 1963;

—trade relations in the Middle East and Southeast Asia will return to normal;

—continued success of the "new technology" will help to accelerate agricultural production;

—there will be no worldwide armed conflict.

U.S. WHEAT EXPORTS

Wheat is the world's most widely traded food. Our own wheat exports have nearly doubled in the past decade. For the past 4 years they have taken 60 percent of our record wheat harvests. And they have accounted for over 40 percent of world wheat trade.

But near-term projections for U.S. exports in 1973/74 reflect the current international situation—a slowdown in growth of import demand in the face of abundant world supplies.

Wheat output has soared in the major food-deficit countries. And harvests are at record levels in the major exporting countries—the United States, Canada, France, Australia, Argentina.

As both commercial and concessional import demand is slackening, stocks are building up. Producer and export prices have therefore fallen sharply in several major producing countries.

Though the U.S. food aid program is expected to continue, it may be somewhat modified from its present form. And food aid requirements will probably taper off as many developing countries continue to score production successes.

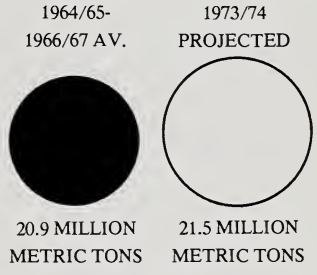
Wheat aid needs by India and Pakistan, as projected to 1973/74, will be 40 percent less than the high level of 8 million tons in 1967/68.

Market prospects in Western Europe are not bright either near-term or long-run. Per capita demand for wheat as food is declining as already high incomes continue to rise and domestic wheat production rises, too. Competition from other wheat suppliers also can be expected to stiffen.

However, developing countries with an accelerating economic growth appear to be good potential wheat customers, not necessarily under government programs. Within 5 years, these markets should include South Korea, Taiwan, Venezuela, the Caribbean, and possibly Central America. Hong Kong, Singapore, Peru and Chile may figure more strongly by 1980.

Destination	1963/64	1964/65	1965/66	1966/67	1967/68[1]	Projected 1973/74
	Million metric tons					
Western Europe	3.3	1.4	3.4	2.8	2.0	**2.5**
Eastern Europe and USSR	3.5	1.2	1.6	.5	.3	**.5**
Japan	2.0	1.7	1.9	2.1	2.2	**2.5**
Other East Asia	1.4	1.3	1.7	2.1	2.4	**4.6**
South Asia	6.2	7.7	8.1	5.2	8.0	**4.5**
Africa and West Asia	4.0	3.6	4.1	4.2	2.2	**2.9**
Latin America	2.7	2.4	2.6	3.1	3.3	**4.0**
Total[2]	23.1	19.3	23.4	20.0	20.4	**21.5**

[1] Preliminary. [2] Includes flour in wheat equivalent; excludes products.



U.S. RICE EXPORTS

Rice has rapidly risen to the fore as a U.S. export, with over 60 percent of our harvest moving into foreign markets to make up over one-fourth of world exports.

Capitalizing on a reliable supply of quality rice and a period of scarce world supplies, the United States became the world's largest rice exporter in 1967 with shipments of about 1.8 million tons. It has since expanded its exports to levels which could reach 2.3 million tons in 1969.

But weather has favored much of the Asian rice bowl for 2 years, and new seeds and farming methods have taken hold on progressively larger acreages. The tight world rice situation has been alleviated.

Furthermore, export prices have fallen 25 to 30 percent in less than a year. Stocks are large (and export prices relatively low) in the Philippines, Pakistan, and Burma.

The failure of Burma—and perhaps Thailand—to move out exportable supplies last year may swell 1969 supplies, too, despite reports of a lower-than-expected Thai rice crop. South Vietnam's rice import needs are falling.

After 1969, our rice exports could drop below the current 2 million tons if we don't move sizable quantities under government

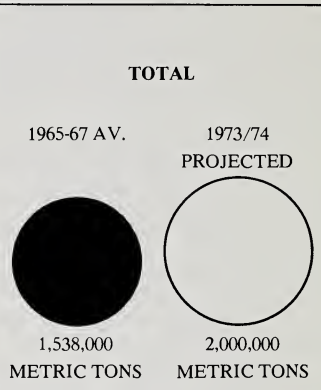
programs for commodity exports.

Some expansion for cash can be expected the next 5 years in developed areas—notably the EEC—but not in Japan. Other good cash prospects are West Asia, West Africa, Singapore, Hong Kong, and West Malaysia.

However, prospects for expanding our rice exports beyond the 2-million-ton level seem unlikely even by 1980—though vagaries of weather, politics, and economic growth of key rice-growing countries could alter this.

Destination	1963	1964	1965	1966	1967[1]	Projected 1974
			1,000 metric tons			
Western Europe	158	171	128	178	211	**290**
Eastern Europe and USSR	4	77	—	—	20	**20**
Japan	1	105	303	103	94	**50**
Other East Asia	319	186	333	486	1,019	**580**
South Asia	334	276	220	64	—	**300**
Africa and West Asia	257	345	344	365	292	**550**
Latin America	79	126	138	81	104	**150**
Canada	45	42	47	39	46	**60**
Total	1,197	1,328	1,513	1,316	1,786	**2,000**

[1] Preliminary.



U.S. FEED GRAIN EXPORTS

Feed grains—especially corn and grain sorghums—are on the ascendant in world trade. And the U.S. can expect to share in mounting exports at least to 1980. It now supplies over half of global feed grain exports.

Continued expansion of U.S. feed grain sales is envisaged to the EEC and Japan. They now take about half our feed grain shipments of around 19.5 million tons, which are projected to reach the level of 30 million tons by 1973/74.

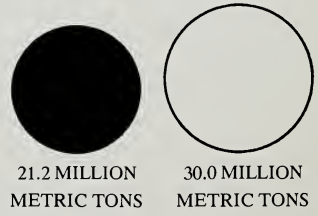
In contrast to the rice situation, the sharpest rise for feed grains should be in Japan—where per capita use of animal proteins is extremely low and production of feed grains is expected to fall rather than increase.

This trend is expected to hold up to 1980. But in the long term the question will not be how much Japan ups its feed grain imports, but who will supply them.

We can expect stiffening competition, especially from Australia, Thailand, and the Republic of South Africa—all of whom enjoy locational advantages and prospective benefits from bilateral trade agreements with Japan. (*18*)

Destination	1964/65	1965/66	1966/67	1967/68[1]	Projected 1973/74
			Million metric tons		
Western Europe	12.0	16.6	10.6	11.3	**14.9**
Eastern Europe and USSR	.2	1.0	1.0	.6	**1.7**
Japan	3.2	4.4	4.5	4.3	**9.0**
Other East Asia	.1	.2	.2	.3	**2.0**
South Asia	.2	1.1	2.7	1.0	**—**
Africa and West Asia	.8	1.0	1.0	.7	**1.0**
Latin America	.4	.4	.3	.5	**.6**
Canada	.6	.7	.5	1.0	**.8**
Total[2]	17.5	25.4	20.8	19.7	**30.0**

[1] Preliminary. [2] Excludes grain products.



Israel Is Reaping Benefits From 20 Years of Agricultural Emphasis

Israel is in its 21st year as an independent nation.

Over the past two decades it has converted a rather small, under-developed agricultural sector into a highly advanced and sophisticated system.

Israel's farmers now produce three-quarters of the country's food requirements (by value). They can meet most major food needs of a population now numbering about 2.8 million. But sizable amounts of grains, oilseeds, and red meat still have to be imported.

The Jewish sector—representing about 90 percent of the population—works more than three-quarters of the land in crops, which in turn amounts to one-fifth of total land use.

There has been heavy emphasis on agriculture since Israel's independence. And the heavy influx of immigrants in the mid-1950's lent impetus to the development of production facilities to feed a fast growing population.

Output of some farm products actually rose relatively faster than consumption. There was concern about farmers' prices dropping.

The government therefore adopted various policies to control output. Many of these production controls are still in effect, but present government policy is to eliminate them slowly.

During Israel's early years, heavy imports of food and machinery were necessary to provide for the waves of newcomers. This created an initial negative balance of total trade.

The trade situation, however, has improved markedly. In 1949, exports (agricultural and nonagricultural) covered only a little more than 10 percent of imports; in 1967, they covered more than 70 percent of imports.

A policy of import restriction and export expansion instituted in 1965 has been meeting with success, as exports increase and imports remain stable or decline.

Main agricultural exports by Israel are citrus and citrus products, which compose about two-thirds of total agricultural exports. Including processed products, all agricultural exports were valued at over $146 million in 1967.

Israel's agricultural imports were valued at $158 million in 1967. Feed grains and oilseeds (mainly soybeans) each accounted for about 25 percent of the total. Animals and animal products (mainly meat) were another 15 percent.

In the past 5 years, the United States has supplied slightly over half of Israel's farm imports.

About 90 percent of Israel's total imports of grains and soybeans came from the United States. And these two commodities accounted for almost half of U.S. agricultural exports to Israel.

Back in 1960, 78 percent of the $56 million in U.S. farm products exported to Israel moved under Public Law 480 programs.

By 1967, the P.L. 480 share had dropped to one-third. Commercial purchases had quadrupled to $48 million.

U.S. dollar exports of feed grains to Israel jumped from nearly zero in 1962 to almost $11 million in 1967. Dollar exports of wheat rose from $3 million to about $7 million. (*19*)

Ah So

Japanese farmers are at the slow end of their country's fast moving economy.

It's a case of too many farmers sharing the land—and many with low productivity levels.

The rate of farm-to-city migration has been accelerating, but there are still about 5 million farm families. And average farm size in Japan is less than 2½ acres.

Despite considerable progress on the farm—including greater use of modern agricultural technology—Japan's total farm income has been only about 10 percent of nonfarm income in recent years. And agriculture's contribution to the national income has slipped to about 8 percent from 20 percent in mid-1950's. *(20)*

Hong Kong's Millions Look To U.S. for Many Farm Imports

When Hong Kong tailors take time out for lunch, what do they eat?

It may well be southern fried chicken and Louisiana rice, along with fresh California celery and oranges—and perhaps an apple or pear from Pacific Northwest orchards.

Hong Kong's 4 million people depend largely on imports for food supplies. And though mainland China is the Colony's prime provider, the United States ranks second as a supplier of farm products. (At the same time, we are Hong Kong's best customer for all its exports.)

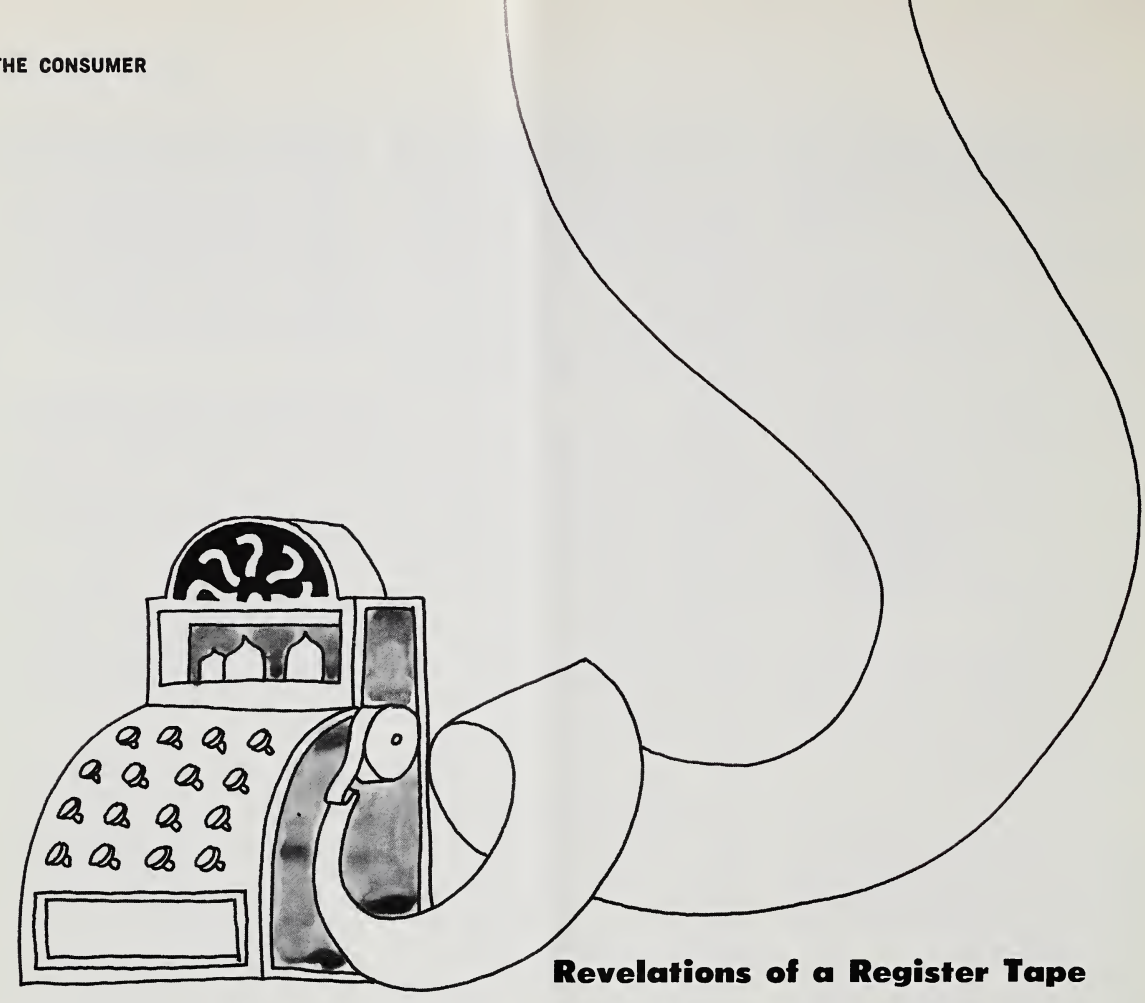
Hong Kong imported $514 million worth of agricultural products in 1967. This was about the same as in 1966 but 34 percent more than 1962 imports.

The U.S. share was $68 million in 1967. And this was an increase of 41 percent over 1966.

We're No. 1 when it comes to supplying Hong Kong with feedstuffs, fresh oranges, and frozen poultry—and with tobacco for its cigarette factories.

As for poultry, the Hong Kongese ate 22.5 pounds per person in 1967. About 7.8 pounds were frozen products and the rest consisted mainly of chickens and ducks that came in live from Mainland China.

Consumption of meat, too, is relatively high by Asian standards—about 100 pounds of pork and 20 pounds of other red meat per person in 1967. (*21*)



Revelations of a Register Tape

A growing grocery bill baffles many a homemaker. Clues to the mystery can be found not merely in rising food prices, but in changing families and tastes, too.

Are you puzzled by your food bill? Does it seem to get bigger and bigger every time you set foot in the grocery store?

There's a natural tendency for us to blame food prices for growing grocery bills. And they are partly responsible. But the size of the register tape total depends a lot on consumers, too.

In recent years food prices have risen along with the cost of just about everything else in the family budget—housing, transportation, medical care, and personal services. But food costs haven't risen as fast as these others. And fortunately, none have risen as much as family incomes.

When we bring home more money, as most of us have been doing, we often spend some of it at the grocery store for higher valued foods—better cuts of meat, gourmet items, and convenience foods.

These actions help to inflate the size of the family food bill. But the size of the family itself can blow it up even more.

Every baby, every birthday boosts the bill. A moderate budget of, say $20 a week, will be enough to pay for all the food a young couple eats at home. But add two small children to the family and the bill jumps to around $30. When they're in elementary school, the total's closer to $35. And with two teenagers, it's a whopping $40.

Of course, these estimates don't include the nonresident nibblers —your children's playmates, the neighbor who's over for coffee, the weekend house guests.

Your changing family and your changing tastes are clues to your changing food bill. So are foods themselves.

Many "mod" foods include:

—Chef services, that help a novice cook turn out delicacies.

—Maid services that cut preparation and cooking time.

—Nutritional expertise that boosts the vitamin and nutrient content of many foods.

Better refrigeration, industry and government research, and faster farm-to-store travel have played a part in improving the quality and wholesomeness of modern foods.

Few of us notice these improvements, although we may feel their impact on the register tape.

Supply and demand—the economic facts of life—also show up in our food bill.

Food is produced outdoors. Thus, supplies depend heavily on nature. When production is cut by bad weather or insect pests or livestock diseases, it can mean a higher cost for us.

Fortunately for the consumer, this doesn't happen as often as it used to. Farmers have found ways to whip some ill effects of weather, with irrigation to overcome drought and faster harvesting methods to get crops out of the field in a hurry. And scientists have developed plants that can resist disease and bugs, and medicines that keep livestock healthy.

But there's no way yet to get around winter weather. So, out-of-season foods cost more because only a few places in the country stay warm enough to grow crops in winter.

You can buy lettuce in the middle of February, but the price will be higher than it was in August. During cold months only California, Arizona, and Florida can grow lettuce. Therefore, supplies are smaller nationwide than they are in warm months. And transportation is more expensive.

On the demand side of the economic coin, more people with more money to spend have been pressuring prices inside and outside the retail store.

For example, our farms are producing over twice as much beef as in 1950—but we have developed such an appetite for beef that retail prices have risen despite the greater output.

And throughout our expanding economy, all the things that go into food production have gotten more expensive.

It costs the farmer more for his seeds, chemicals, machinery, and labor. It costs the processor and distributor more to cook, can, and carry our food because their business costs have gone up, too.

If farmers and people in the marketing industry hadn't increased their output per man-hour significantly, food prices today would be a lot higher than they are.

The farmer's share of our food dollar is about 40 cents. Marketing gets the rest—to process, package, transport, and sell today's better foods.

Some of the things in our shopping cart that take a bite from the family budget are things we don't bite back. Things like soap, paper towels, light bulbs, tooth paste, cigarettes—which aren't food but show up as about one-fifth of the cash register total.

And we also pay a little bit for such shopping services as parking lots, check cashing, plenty of clerks, longer shopping hours, shelf space for everything from hardware to cosmetics—8,000 items where there were only 1,000 two decades ago.

Yes, our grocery bills are bigger today than yesterday—but food takes a smaller share of our average income.

Only two decades ago, 25 cents of the consumer's take-home dollar went for food. In the late 1950's it was 21 cents. Today it's about 17 cents. (*22*)

(*See Outlook, page 2, for current food situation.*)

Revelations of a Register Tape, just released by the Economic Research Service, USDA is available in color as either a slide set or filmstrip, accompanied by a narrative guide.

The slide set has 71 frames, costs $8.00, and may be ordered from: Photography Division, Office of Information, U.S. Department of Agriculture, Washington, D.C. 20250.

The film strip, priced at $7.50, should be ordered from: Photo Lab, Inc., 3825 Georgia Avenue, N.W., Washington, D.C. 20011.

A sound tape, about 10 minutes long, is available from either address. Price is $1.00.

All orders should refer to: *Revelations of a Register Tape*, C119. Purchase orders will be accepted only from State or Federal agencies.

Wheat in the Field Takes Shapes Most Users Wouldn't Recognize

How's your wheat I.Q.?

Can you name 10 different wheat products available at the grocery store?

Can you name five different wheats that go into their making?

The average American homemaker can probably do pretty well with the first exercise. But unless she lives on a farm, she probably can't name even one of the five classes of wheat grown in the United States.

It's a pretty sure bet she's been exposed to hard red winter and hard red spring wheats, even if she can't put a name to them.

These are the varieties used most frequently in the bread she buys at the store—because they contain relatively large amounts of strong, elastic gluten, essential for the best bread flours. Commercial bakers require flours that make up into strong doughs that will stand up to high-speed mixers.

The soft wheats—soft red winter and white—are milled into flour for the cookies, crackers, cakes, and pastries that the homemaker takes home from the grocery store. Some soft wheats also go into whole grain breakfast cereals.

The fifth class of wheat grown in the United States is durum. This is the hardest of all U.S. wheats—and is used chiefly in the

manufacture of semolina, which goes into macaroni, spaghetti, and other noodle products.

The wheats in the family cupboard come from many parts of our Nation.

Hard red winter wheat is grown mostly in the central and southern Great Plains, while its spring counterpart comes from the northern portion of that region.

Soft red wheat is generally grown east of the Mississippi. The whites predominate in the Pacific Northwest and in Michigan and New York. Durum is grown almost exclusively in one state—North Dakota. (*23*)

THE CONSUMER'S DAIRY DOLLAR: Mrs. America spends about $4 a week on dairy products for her family, according to the 1965 Household Food Consumption Survey. More than half goes for fluid milk products—whole and skimmed, buttermilk, and chocolate milk. (24)

Dried Beans Are Staple Fare In Households of All Income Levels

The House prefers one version, the Senate another. That's why the dining rooms of Congress feature two famous specialties—House and Senate bean soups.

Dry beans are favorites with cooks as well as lawmakers. What's more, they're rich in protein, low in fat. And they also contain calcium, phosphorus, and the B vitamins, and a wealth of iron and energy for their price.

Folks ate lots of beans back in 1910. But we're eating even more of them today—about 7 pounds per person—many in some form of processed product.

Though dried beans are often thought of as the poor person's meat, they're staple fare in affluent households, too.

A 1965 household food consumption survey (still valid, since food use doesn't change very fast) showed that the more families earned, up to $7,000, the more canned beans they used. And even when family incomes topped $15,000, canned beans were served at least once a week in about a third of the households.

Bean lovers have myriad varieties to choose from. There are dried white beans—such as the pea (or Navy), great northerns, small whites, white marrows, and yellow-eyes. There are the coloreds—the pintos, red kidneys, pinks, cranberries, black turtle soups, and small reds. And there are the "others"—the large limas, the baby limas, the black eyes, and garbanzos.

Canned pork and beans consist mostly of white beans cooked with tomato sauce. The colored types, particularly red kidneys and pintos, show up as brine packs (where beans are canned in salt or salt-sugar solutions). And you'll find the whole spectrum in specialty packs, such as chili or beans with franks.

Michigan has long been the Nation's No. 1 dry bean producer.

The story goes that right after the Civil War, a Michigan farmer pocketed a handful of beans from his cousin's New York farm.

"I don't know if they'll grow," he supposedly said, "but I'll take 'em along and give 'em a try."

Grow they did. And by 1968, Michigan's output came to about 6.6 billion pounds. The harvest included nearly all of the Nation's pea beans, many of its red kidneys, and about two-fifths of al the U.S. bean crop.

New York, where it all started, produced only about 1.0 billion pounds, mostly red kidney and black turtle soup beans. (*25*)

DAYS SUITABLE FOR FIELDWORK, MISSISSIPPI RIVER DELTA COTTON AREA. B. Bolton, J. B. Penn, F. T. Cooke, Jr., and A. M. Heagler, Farm Production Economics Division, in cooperation with Louisiana State University. La. Agr. Expt. Sta. Res. Rpt. 384.

Estimates on time available for fieldwork may explain some phenomena that are difficult to explain in other contexts. (See page 4, this issue.)

UREA CONSUMED BY CATTLE ON FEED, FEEDING YEAR 1965–66. G. C. Allen, R. L. Mighell, and B. G. Hobson, Farm Production Economics Division. AER–153.

This report presents the results of a national survey on urea used by cattle and calves on feed. It provides answers to such questions as how much urea is being consumed by cattle on feed, in what form it is being fed, what percentages of feedlots and cattle on feed are being supplied with it, what are the most common sources of supply, and what regional and size group differences may be present. (See January 1969 Farm Index.)

ALTERNATIVE CROP ENTERPRISE BUDGETS FOR DRYLAND PRODUCTION, SOUTHWESTERN OKLAHOMA. P. L. Strickland, Farm Production Economics Division, and T. L. Dunn, Oklahoma State University. Okla. Agr. Expt. Sta. Processed Series P–599.

The budgets and other information in this publication can be used by farmers and other decision-makers as a guide to planning farming adjustments.

The information in this report may not be directly applicable to a particular farm; however, the data on costs, returns, and resource requirements are representative of a great many farms in this area of the State. Adjustments in the data (prices, yields, etc.) can easily be made for application to specific farm situations.

RECENT PUBLICATIONS

The publications listed here are issued by the Economic Research Service and cooperatively by the State universities and colleges. Unless otherwise noted, reports listed here and under Sources *are published by ERS. Single copies are available free from The Farm Index, OMS, U.S. Department of Agriculture, Washington, D.C. 20250. State publications (descriptions below include name of experiment station or university after title) may be obtained only by writing to the issuing agencies of the respective States.*

A NONLINEAR MODEL FOR EVALUATION OF COTTON PROCESSED MILLS FOR SPECIFIC END USES. P. E. LaFerney, Marketing Economics Division. Tech. Bull. 1401.

The theoretical model described and exemplified in this study provides a framework which management of textile firms may use in solving the interrelated problems of procuring and processing cotton, and selling and distributing final products.

SUPPLEMENT FOR 1968 TO STATISTICS ON COTTON AND RELATED DATA, 1930–67. Cotton and Other Fiber Section, Economic and Statistical Analysis Division. SB–417 (Supp.)

This bulletin is the first annual supplement to *Statistics on Cotton and Related Data, 1930–67,* Statistical Bulletin No. 417, published in March 1968. This supplement contains data for the 1967/68 crop year, selected data for early months of the 1968/69 year, and some revisions for earlier years.

EUROPEAN ECONOMIC COMMUNITY AGRICULTURAL TRADE STATISTICS, 1961–67. Trade Statistics and Analysis Branch, Foreign Development and Trade Division. ERS–For. 247.

Since 1958, developments in the agricultural trade of the European Economic Community (EEC) —have drawn worldwide interest. These developments are of particular concern to the United States, since it is the world's largest exporter of agricultural products, and the EEC is its largest customer.

This report updates EEC agricultural trade statistics by quantity and value of the commodities imported and exported and their totals.

SUPPLEMENT FOR 1968 TO LIVESTOCK FEED RELATIONSHIPS, 1909–63. G. C. Allen and M. Devers, Farm Production Economics Division. SB–337 (Supp.)

This report presents current estimates of animal units of livestock fed annually; livestock-production units; high-protein animal units; feed consumption by various classes of livestock, 1960–68; and feed grain surpluses and deficits by States, 1965–68.

OPTIMUM GROWTH PLANS FOR GRAIN FARMS IN CENTRAL ILLINOIS USING ALTERNATIVE LAND-FINANCING STRATEGIES: A STATISTICAL SUMMARY. A. Smith, Farm Production Economics Division, and C. B. Baker, University of Illinois. Ill. Agr. Expt. Sta. AERR–96.

Multiperiod linear programing was used in this study to determine the effects of alternative financial strategies on income, growth, and other economic aspects of a cash-grain farm.

A 21-year planning period was considered, divided into seven subperiods of 3 years each. The

planning period was begun with a farm of 320 acres, of which 310 were tillable and planted to corn and soybeans.

IMPACT OF ECONOMIC OPPORTUNITY LOANS ON RURAL RESIDENTS: SOUTH CAROLINA, THE OZARKS, MISSISSIPPI DELTA, 1966. D. D. Steward, Economic Development Division. AER–151.

The Farmers Home Administration had made Economic Opportunity loans to 44,478 families throughout the United States by February 29, 1968. Total funds loaned since the program was initiated in January 1965 exceeded $86 million and averaged $1,935 per borrower. The large number of borrowers was still less than 1 percent of the number of all rural households reporting incomes of less than $3,000 in 1959.

FERTILIZER USE IN MINNESOTA: 1964 STATE AND SUBREGION ESTIMATES, B. M. Buxton and W. A. Elder, Farm Production Economics Division, in cooperation with the University of Minnesota. Minn. Agr. Expt. Sta. R68–5.

Detailed estimates of 1964 farm fertilizer use in Minnesota are presented in this report to aid the Minnesota fertilizer industry in analyzing and planning fertilizer production and distribution.

No attempt is made to project future farm fertilizer use in Minnesota nor to suggest the benefits to farmers from increased fertilizer applications. The estimates presented, however, should be useful in projecting fertilizer trends, particularly when similar estimates are available for 1969.

ECONOMIC PERFORMANCE OF MOTOR CARRIERS OPERATING UNDER THE AGRICULTURAL EXEMPTION IN INTERSTATE TRUCKING. W. Miklius, Marketing Economics Division. MRR–838.

This report analyzes performance of the sector of the motor carrier industry operating under the agricultural exemption.

The available evidence indicates that exempt motor carriers provide a price-product combination which users prefer to that of regulated carriers. Surveys of shippers have indicated that the quality of service provided by exempt carriers is superior, and that the rates of the exempt carriers are generally lower than regulated rates.

PARTITIONING FINANCIAL RETURNS: AN APPLICATION TO THE GROWTH OF FARM FIRMS. D. Bostwick, Farm Production Economics Division. ERS–390.

This analysis of financial management of the farm firm, provides researchers with a consistent and meaningful procedure for allocating financial returns to the investment, ownership, and entrepreneurial functions of the firm. Partitioning financial returns to these three functions in a consistent manner allows researchers to analyze alternative means by which farm firms may acquire access to the resource services they need. The resource services needed and the means by which they are acquired are, in turn, dependent upon the goals of the firm.

MACHINERY COSTS ON TYPICAL WHEAT FARMS IN CENTRAL SOUTH DAKOTA. E. O. Ullrich, Jr., Farm Production Economics Division, J. T. Sanderson, and W. G. Aanderud, South Dakota State University. S. Dak. Agr. Expt. Sta. Circular No. 186–193.

This series of eight reports presents the findings of a South Dakota study covering 26 counties in the Central South area of the State.

This area normally accounts for about 68 percent of the State's wheat acreage, 43 percent of the feed grain acreage, 60 percent of the State's flax acreage and about 55 percent of the total tame and native hay acreage.

THE WORLD AGRICULTURAL SITUATION: REVIEW OF 1968 AND OUTLOOK FOR 1969. Foreign Regional Analysis Division. FAER–50.

Agricultural output in 1968 rose 2 to 3 percent for the world as a whole. Because of differences in population growth, this uptrend indicates a per capita increase in the developed countries but no per person increase in output for the less developed world. For U.S. exports, the outlook is a bit less promising than in 1967/68. Oilseeds, animal products, and fruits and vegetables are among the exceptions.

Numbers in parentheses at end of stories refer to sources listed below:

1. Farm Real Estate Market Developments, CD–71 (P); 2. Feed Situation, FdS–227 (P); 3 B. Bolton and others, Days Suitable for Fieldwork, Mississippi River Delta Cotton Area, La. Agr. Expt. Sta. D.A.E. Res. Rpt. 384 (P*); 4. Bruce B. Johnson (SM); 5. Farm Mortgage Lending, FML–21 (P); 6. Wayne D. Rasmussen (SM); 7. J. B. Hottel, Warren R. Grant, and Troy Mullins, Equipment Technology and Weather on Rice Farms in the Grand Prairie, Arkansas, Part I: Farm Organization and Risk, Ark. Agr. Expt. Sta. Bull. 734 (P*); 8. D. David Moyer, Three Automated Land Data Systems in the United States (S); 9. Edgar L. Michalson (SM); 10. Hughes H. Spurlock, Rural Housing Conditions in the Arkansas, Missouri, and Oklahoma Ozarks, Ark. Agr. Expt. Sta. Bull. 736 (P*); 11. Gerald Doeksen (SM); 12. Robert H. Dawson and Robert H. Reed, An Analysis of Operations and Costs in California Canned Asparagus Plants, Calif. Agr. Expt. Sta. (M*); 13. William E. Pearson (SM); 14. Anthony G Mathis, "Government's Role in Pricing Fluid Milk," Diary Situa., DS–323 (P); 15. Robert M. Walsh (SM); 16. Livestock and Meat Situation, LMS–166 (P); 17. and 18. Quentin M. West, The Future for U.S. Grain Exports (S); 19. Michael E. Kurtzig, Israel's Agricultural Economy in Brief (M) and Foreign Agricultural Trade, Feb. '69 (P); 20. Marshall Cohen, The Food Industry in Western Europe and Japan (S); 21. Foreign Agricultural Trade, Jan. '69 (P) and Marion Larsen (SM); 22. Marketing Economics Division (SM); 23. Wheat Situation, WS–206 (P); 24. Robert R. Miller, "Consumption Patterns for Dairy Products in 1965, With Changes From 1948 and 1955," Dairy Situa., DS–318 (P); 25. Donald S. Kuryloski (SM); 26. Robert J. Henley (SM).

Speech (S); published report (P); unpublished manuscript (M); special material (SM); * State publications may be obtained only by writing to the experiment station or university cited.

ECONOMIC TRENDS

ITEM	UNIT OR BASE PERIOD	'57-'59 AVERAGE	1968				1969
			YEAR	JANUARY	NOVEMBER	DECEMBER	JANUARY
Prices:							
Prices received by farmers	1910-14=100	242	260	254	262	262	263
Crops	1910-14=100	223	228	230	227	221	220
Livestock and products	1910-14=100	258	288	275	292	296	299
Prices paid, interest, taxes, and wage rates	1910-14=100	293	354	347	360	360	363
Family living items	1910-14=100	286	335	327	341	341	342
Production items	1910-14=100	262	292	288	294	296	296
Parity ratio		83	73	73	73	73	72
Wholesale prices, all commodities	1957-59=100	—	108.7	107.2	109.6	109.8	110.7
Industrial commodities	1957-59=100	—	109.0	107.8	109.9	110.3	110.9
Farm products	1957-59=100	—	102.2	99.0	103.1	103.3	104.9
Processed foods and feeds	1957-59=100	—	114.1	112.4	114.7	114.7	115.9
Consumer price index, all items	1957-59=100	—	121.2	118.6	123.4	123.7	—
Food	1957-59=100	—	119.3	117.0	120.5	121.2	—
Farm Food Market Basket: [1]							
Retail cost	Dollars	983	1,118	1,098	1,124	1,129	—
Farm value	Dollars	388	434	417	429	436	—
Farm-retail spread	Dollars	595	684	681	695	693	—
Farmers' share of retail cost	Percent	39	39	38	38	39	—
Farm Income: [2]							
Volume of farm marketings	1957-59=100	—	126	132	173	144	—
Cash receipts from farm marketings	Million dollars	32,247	44,065	3,660	4,957	4,097	—
Crops	Million dollars	13,766	18,424	1,604	2,745	1,953	—
Livestock and products	Million dollars	18,481	25,641	2,056	2,212	2,144	—
Realized gross income [3]	Billion dollars	—	—	—	—	51.1	—
Farm production expenses [3]	Billion dollars	—	—	—	—	36.3	—
Realized net income [3]	Billion dollars	—	—	—	—	14.8	—
Agricultural Trade:							
Agricultural exports	Million dollars	4,105	—	546	609	611	—
Agricultural imports	Million dollars	3,977	—	415	420	421	—
Land Values:							
Average value per acre	1957-59=100	—	—	[4]166	[5]176	—	—
Total value of farm real estate	Billion dollars	—	—	[4]188.8	[5]200.6	—	—
Gross National Product: [3]	Billion dollars	457.3	860.6	—	—	887.4	—
Consumption [3]	Billion dollars	294.2	533.8	—	—	546.8	—
Investment [3]	Billion dollars	68.0	127.7	—	—	136.6	—
Government expenditures [3]	Billion dollars	92.4	197.2	—	—	203.0	—
Net exports [3]	Billion dollars	2.7	2.0	—	—	1.0	—
Income and Spending: [6]							
Personal income, annual rate	Billion dollars	365.3	685.8	654.9	708.0	713.5	715.1
Total retail sales, monthly rate	Million dollars	17,098	28,322	27,065	28,779	28,083	28,673
Retail sales of food group, monthly rate	Million dollars	4,160	6,110	5,886	6,236	6,133	—
Employment and Wages: [6]							
Total civilian employment	Millions	63.9	75.9	75.2	76.4	76.9	77.2
Agricultural	Millions	5.7	3.8	4.0	3.7	3.9	3.8
Rate of unemployment	Percent	5.8	3.6	3.5	3.3	3.3	3.3
Workweek in manufacturing	Hours	39.8	40.7	40.2	40.8	40.7	40.7
Hourly earnings in manufacturing, unadjusted	Dollars	2.12	3.01	2.94	3.08	3.10	3.12
Industrial Production: [6]	1957-59=100	—	165	161	167	169	169
Manufacturers' Shipments and Inventories: [6]							
Total shipments, monthly rate	Million dollars	28,745	50,338	48,447	52,548	51,514	—
Total inventories, book value end of month	Million dollars	51,549	85,742	82,890	87,947	88,438	—
Total new orders, monthly rate	Million dollars	28,365	50,626	48,353	53,100	53,118	—

[1] Average annual quantities of farm food products purchased by urban wage-earner and clerical-worker households (including those of single workers living alone) in 1959-61—estimated monthly. [2] Annual, quarterly, and monthly data are on 50-State basis; volume of marketings and '57-'59 averages are on 48-State basis. [3] Annual rates seasonally adjusted fourth quarter. [4] As of November 1, 1967. [5] As of November 1, 1968. [6] Seasonally adjusted.

Sources: U.S. Dept. of Agriculture (Farm Income Situation, Marketing and Transportation Situation, Agricultural Prices, Foreign Agricultural Trade and Farm Real Estate Market Developments); U.S. Dept. of Commerce (Current Industrial Reports, Business News Reports, Advance Retail Sales Report and Survey of Current Business); and U.S. Dept. of Labor (The Labor Force and Wholesale Price Index).

Recreation Revenues

Skiers who snowplow, schuss, or simply somersault down Colorado's slopes leave dollars as well as trails.

They spend about $100 per stay on Colorado mountainsides, according to recent estimates. This adds up to big money because nearly 1.8 million skiers wended their ways down the State's national forest slopes during the 1967/68 season, four times as many as in 1960/61.

When the snows have melted, another type of recreationist heads for the Centennial State's hills.

Hunters after big game spent an estimated $28 million gross in Colorado on equipment, services, and facilities during 1967—and other $1.6 million on hunting licenses.

Cold water fishing was an even bigger sport during the warm months. Anglers' spending added up to nearly $61.9 million in 1967—plus another $1.9 million for fishing licenses and fees.

Recreation, already a big business, probably will mean even greater revenues for Colorado and its citizens in the years to come.

Better transportation is likely to bring in more out-of-Staters. And Colorado's own population is expected to nearly double by the year 2000, while per capita incomes are projected to triple.

More people with more money to spend could well mean a big jump in the $250 million spent by Colorado residents on recreation in 1967. (*26*)

THE FARM INDEX

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